

**REMARKS**

**SPECIFICATION**

The Examiner objected to the Specification for an informality on page 1, line 24. Applicants have amended the Specification as requested by the Examiner and respectfully request withdrawal of the objection.

Applicants have also amended the Specification, adding a paragraph prior to page 7, line 14 to more clearly articulate the operation of an embodiment of the invention. No new matter has been added because the new paragraph merely makes explicit, subject matter that was inherently disclosed in the application. In particular, a person skilled in the art, upon reading, for example, page 5, line 11 to page 7, line 16, would understand the subject matter of the new paragraph to be inherently disclosed.

**STATUS OF THE CLAIMS**

Claims 12-26 were previously pending in the application. By the Amendment, Claims 12 -26 are currently amended.

**CLAIM OBJECTIONS**

The Examiner objected to Claims 18 and 26 because of informalities. Applicants have amended Claims 18 and 26, removing the objected to language. Applicants respectfully request withdrawal of the objections to Claims 18 and 26.

The Examiner also objected to Claims 17 and 25 for failing to further limit the subject matter of the claim from which they depend. Applicants have amended Claims 17 and 25 to depend from independent Claims 12 and 19, respectively. Applicants respectfully request withdrawal of the objections to Claims 17 and 25.

CLAIM REJECTIONS 35 USC § 112

Claims 12 and 19 stand rejected under 35 USC § 112, second paragraph, as being indefinite because of a lack of antecedent basis. Applicants have amended Claims 12 and 19 to provide proper antecedent basis and respectfully request withdrawal of the rejections of Claims 12 and 19. Applicants also respectfully request withdrawal of the rejections of Claims 13-18 and 20-26, which are objected to based on their dependency on Claims 12 or 19.

Claims 17, 18, 25, and 26 stand rejected under 35 USC § 112, second paragraph, as being incomplete for omitting essential steps. Applicants have amended Claims 17, 18, 25, and 26 as suggested by the Examiner, and respectfully request withdrawal of the rejections of Claims 17, 18, 25, and 26.

CLAIM REJECTIONS 35 USC § 102

Independent Claim 12

Claim 12 stands rejected under 35 USC § 102(b) as being anticipated by European Patent No. 1180652 (Hirsch) and United States Patent No. 4,432,211 (Oishi). Claim 12 also stands rejected under 35 USC § 102(e) as being anticipated by United States Published Patent Application No. 2004/0004803 (Joseph).

Independent Claim 12 recites, among other things, “b) generating a pulse-duty ratio for a pulsed supply current for said defroster heater depending on said recorded voltage value; and c) supplying said defroster heater with said pulsed supply current keyed according to said generated pulse-duty ratio, for a fixed heating interval.”

Hirsch discloses a controller 1 and method for defrosting a refrigerator. The controller 1 controls a compressor 3 and an evaporator heater 13. The controller 1 determines a projected defrost time based on several factors including a mains voltage. At a predetermined time, the controller 1 switches on the heater 13 to defrost an

evaporator 2. When the evaporator 2 reaches a predetermined temperature, as detected by a temperature sensor 22, defrosting is terminated. The length of time for which the heater 13 was on is compared with the projected defrost time, and the controller 1 adjusts future projected defrost times based on any differences between the actual defrost time versus the projected defrost time. *Hirsch*, col. 5, line 48 to col. 7, line 6.

The heater 13 of Hirsch is turned on during the entire defrost period, and the mains voltage is used only to determine a projected length of the defrost period. Therefore, Hirsch does not disclose “supplying said defroster heater with said pulsed supply current keyed according to said generated pulse-duty ratio, for a fixed heating interval,” as required by Claim 12.

Oishi discloses a defrosting apparatus that monitors a current in a defrost heater and uses the changes in resistance of the heater, and thus changes in the current detected, to determine when defrosting is complete. *Oishi*, col. 4, line 60 to col. 5, line 31; Fig. 4.

The voltage supplied to the heater is substantially constant during the defrosting process. *See Oishi*, col. 5, lines 32-36; Fig. 5. Therefore, Oishi does not disclose “supplying said defroster heater with said pulsed supply current keyed according to said generated pulse-duty ratio, for a fixed heating interval,” as required by Claim 12.

Joseph discloses a latchable relay that can be used to control electrical apparatus including a defroster heater 88. A microprocessor 19 actuates/unactuates the relay using a positive/negative pulse having sufficient power to actuate/unactuate the relay. The microprocessor 19 determines the period of the pulse based on the amplitude of an AC signal. Joseph does not disclose how the defroster heater 88 is operated. *Joseph*, page 3, paragraphs 32-33; page 5, paragraph 54.

Therefore, Joseph does not disclose “supplying said defroster heater with said pulsed supply current keyed according to said generated pulse-duty ratio, for a fixed heating interval,” as required by Claim 12.

For at least the above reasons, independent Claim 12 and dependent Claims 13-18 are allowable.

Dependent Claims 13, 14, and 18

Dependent Claims 13 and 14 stand rejected under 35 USC § 102(b) as being anticipated by Hirsch and under 35 USC § 102(e) as being anticipated by Joseph. Claim 18 stands rejected under 35 USC § 102(b) as being anticipated by Hirsch and Oishi and under 35 USC § 102(e) as being anticipated by Joseph.

Claims 13, 14, and 18 depend from Claim 12 and are allowable for the reasons set forth above with respect to Claim 12 and also because they recite additional patentable subject matter.

Independent Claim 19

Claim 19 stands rejected under 35 USC § 102(b) as being anticipated by Hirsch and Oishi. Claim 19 also stands rejected under 35 USC § 102(e) as being anticipated by Joseph.

Independent Claim 19 recites a “recording circuit generating a keyed control signal with a pulse-duty ratio dependent on the recorded voltage value; and a circuit breaker activated by said control signal for pulsing a supply current fed to said defroster heater for a fixed heating interval.”

For at least the reasons set forth above with respect to Claim 12, neither Hirsch, Oishi, nor Joseph disclose a “recording circuit generating a keyed control signal with a pulse-duty ratio dependent on the recorded voltage value; and a circuit breaker activated by said control signal for pulsing a supply current fed to said defroster heater for a fixed

heating interval,” as required by Claim 19. Accordingly, independent Claim 19 and dependent Claims 20-26 are allowable.

Dependent Claims 20-22 and 26

Dependent Claims 20-22 and 26 stand rejected under 35 USC § 102(b) as being anticipated by Hirsch. Dependent Claim 26 stands rejected under 35 USC § 102(b) as being anticipated by Oishi. Claims 20, 21, and 26 stand rejected under 35 USC § 102(e) as being anticipated by Joseph.

Claims 20-22 and 26 depend from Claim 19 and are allowable for the reasons set forth above with respect to Claim 19 and also because they recite additional patentable subject matter.

CLAIM REJECTIONS 35 USC § 103

Dependent Claims 15-17 and 23-25

Dependent Claims 15-17 and 23-23 stand rejected under 35 USC 103(a) as being unpatentable over Hirsch and as being unpatentable over Joseph in view of Hirsch.

Claims 15-17 depend from Claim 12 and are allowable for the reasons set forth above with respect to Claim 12 and also because they recite additional patentable subject matter.

Claims 23-25 depend from Claim 19 and are allowable for the reasons set forth above with respect to Claim 19 and also because they recite additional patentable subject matter.

**CONCLUSION**

In view of the above, entry of the present Amendment and allowance of Claims 12-26 are respectfully requested. If the Examiner has any questions regarding this Amendment, the Examiner is requested to contact the undersigned.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Craig J. Loest', written in a cursive style.

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